

Beginning in the mid-1990s, independent online service providers such as AOL, Earthlink, CompuServe, Prodigy, MSN, and literally thousands of smaller firms facilitated the initial mass deployment of Internet services by giving consumers access to Internet-based content over narrowband “dial-up” telephone connections. Many of these providers began as content-based systems: users dialed into CompuServe, for example, and received content created by or affiliated with CompuServe. In the mid-1990s, these proprietary information services were still “the undisputed rulers of the on-line world, offering a mix of news, entertainment services, chat rooms and forums” on a variety of subjects. “At the time, the Internet was still in its infancy as a consumer medium. Most people considered it too forbiddingly technical to attract a mass audience.” The Internet was still mainly textual based, while the private providers offered graphical interfaces.<sup>17</sup>

As consumers began to seek access to all of the information available online, these providers started to establish access to unaffiliated content on the Internet, while still providing their own proprietary content. As one analyst put it in 1995: “All online services are incorporating the World Wide Web into their strategy. If they don’t, they could have a limited future because the Web is where the greatest amount of new content is being created.”<sup>18</sup> The key is that these companies – now dubbed “Internet service providers” -- successfully responded to changing consumer demand in a highly-competitive market.

Modern-day ISPs continue to provide enormous value to their customers. The ISP function typically includes arranging for consumer access to the Internet through

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<sup>17</sup> Ross Laver, High-Tech Dinosaurs?, MACLEAN’S, Nov. 11, 1996, at 50.

<sup>18</sup> Jiri Weiss, “Online Services Take the Web for a Spin”, PC WORLD, Nov. 1995, at 54 (quoting Karen Burka of SIMBA Information).

local telecommunications links. The ISP directly bills consumers for the connection, and provides various customer support functions. The ISP may also provide a rich array of content and services, such as: customized web pages, web hosting, e-mail server provision, e-mail roaming, IP addresses (static or dynamic), access to domain name search and registration, browser and search engines, anti-spam software tools, Instant Messaging, streaming audio and video feeds, public radio station broadcasts, community bulletin boards and other local content, and technical seminars and workshops. These critical functions are being provided to consumers in a highly competitive narrowband ISP market.

Although the industry is experiencing consolidation, and considerable churn, due to the recent economic downturn, there still are thousands of ISPs providing consumers with a wide variety of choices. Those choices largely would be unavailable in the absence of a fundamental requirement that consumers utilizing the telephone network have the right freely to select and utilize the ISP of their choice.

There are currently many different ways to obtain Internet service, from the barest-bone to the highly advanced. Consumers and businesses require this kind of diversity to satisfy both their pricing and service needs. In short, there is a compelling public interest in accommodating many online providers.

ISPs and their services can be parsed in a variety of ways. A few are outlined below.

## 1. CUSTOMERS

ISP customers can include residential subscribers, small-to-large business users or other ISPs. Some ISPs provide service to all categories, while others target a certain sector, such as “business” or “residential”.

- **Business Class**

Ex.: WorldCom, Genuity, Cable & Wireless

- **Consumer/Residential**

- **National Providers**

Usually provide their own content

Usually provide multiple & advanced service offerings

Ex.: AOL, MSN, Earthlink, NetZero, Juno

- **Regional/Local Providers**

Offer local content (Hoonah.net at [www.hoonah.net](http://www.hoonah.net)). Offer a lower price by not providing so many bells & whistles (basic Internet connectivity)

Ex.: Leapfrog Internet -

[http://www.leapfroginternet.com/a\\_Choosing%20an%20ISP.htm](http://www.leapfroginternet.com/a_Choosing%20an%20ISP.htm)

*“We are differentiated from other ISPs in that we provide good value for an excellent product without the extra stuff you do not want nor need.”*

## 2. CONNECTION SERVICES

The average ISP provides dial-up access, full and fractional T1 connections, and ISDN services. Many small local providers only supply dial-up services to the residential market, while the larger providers offer broadband & dedicated access to large business customers and the smaller ISPs.

- Dial-Up (ISDN, 33.6, 28.8, 56K)
  - Ex.: A Cute Internet Service (<http://acuteinternet.com>)
- Dedicated Access (T1, T3, Frame Relay, FracT3, DSL, ATM)
- Broadband (DSL, Cable, Fixed Wireless, Satellite)

### **3. SERVICE OFFERINGS**

As ISP services evolve, most providers are now offering webhosting, security, & filtering services, along with the traditional email, & newsgroup services. A sampling of the diversity of services offered includes:

- Email - Webmail/pop/imap (email access from any computer)
- Web Site Hosting
- Domain Name Registration
- Technical Support
- News/Newsgroups
- Web-based Remote Access
- Virtual Private Networks (VPNs)
- VoIP (Voice over IP)
- Security (VPN, Secure Server, Firewalls, Authentication)
- Static IP Addresses
- Filtering (Spam, Advertising, Adult Content, Unsecure Sites)
- Service Level Agreements (ISPs agree to provide a certain level of service; assigns customer priority)
- Scalability (a range of capacities with varying configurations of virtual ports; allows bandwidth to be allotted based on need)
- Dynamic Provisioning (allows users to change a service package or user profile “on the fly” without forcing the user to disconnect.)

### **4. PRICING**

The variety of services offered allows for a large price range among service providers. Some offer a flat fee for bundled services, while others charge for each service selected. Still other ISPs base their fees on connection times or bandwidth, or provide special rates for certain subscriber groups.

Other pricing approaches:

- Prepaid and budgeted connectivity - Allows ISPs to automatically deduct or credit minutes from connection-time balances as users surf the web.
- Promotional Connectivity – Provides free connectivity for a pre-defined period and then redirects users to a registration site for continued Internet service. As a result, ISPs can promote their services and attract new paying customers.

- Service Wholesaling – allows ISPs to resell bundled, advanced, or differentiated services to smaller ISPs who then can offer these to end-users.
- Differentiated Content – Enables ISPs to provide specialized content to different user groups or “clubs” for additional fees. For example, users can pay for access to interactive content such as online gaming or unidirectional information such as high-end financial services.
- Service Priority or Demand – Dynamically allocates improved class of service or increased bandwidth when requested by subscribers.
- Examples of Pricing Range –
  - AllVantage <http://www.allvantage.com/> \$5.95/month, “self-service” ISP concept;
  - VerizonOnline DSL <http://www.verizon.net/pands/dsl/packages/package2.asp> \$59.95/month.

## **5. CONTENT/STRUCTURE/CONTROL**

ISPs use other approaches to differentiate themselves from competitors and to increase brand recognition, customer relationships, and site traffic. As technological advances increase the ability to fashion and even manipulate a user’s Internet experience, it becomes even more important for users to have a choice in the ISP market. Common approaches include:

- “Pure Internet” ISPs (Earthlink – “customized by you, for you”) – provide a direct pass through to the Internet. Allow the user to define their Internet experience without extraneous content. Provide simple services such as connection & service support.
- Value-Added Approach (AOL) – ISP creates and aggregates exclusive and nonexclusive content, features (e.g., parental controls) and functionality (e.g., Instant Messaging) for subscribers. ISPs can define and provide environments for specific users and user groups. This approach creates new commercial service opportunities by promoting access to particular sites.
- Subscriber Redirection – IP packets can be manipulated to redirect subscribers to selected sites or portals. This feature enables increased traffic to specific sites and personalized communications with individual users.
- Sticky Site – redirects users to specific sites, such as the ISP’s portal, according to pre-defined rules. Site “stickiness” can be increased by allowing users to view a

service announcement, register or pay for a new service, or receive a promotional gift.

- Sponsored E-commerce – ISP encourages subscribers to visit e-commerce portals and sites by offering sponsored end-user access or other promotional benefits. As a result, ISPs increase their revenues from the growing e-commerce market.
- User Service Profiles – ISP tracks subscriber use to determine what services/products they may be interested in.

## **6. TARGETED/SUBJECT FOCUSED ISPs OR SERVICE PACKAGES**

Some ISPs design and offer customized service packages to meet user needs and preferences using filtering techniques and other technical tools. Other ISPs only provide service to specific groups. Targeted areas include:

- Children (School or Family) – (AOL, FamilyClick) (information on family-friendly ISPs available at [http://www.larrysworld.com/articles/lat\\_familyisp.htm](http://www.larrysworld.com/articles/lat_familyisp.htm))
- Foreign Languages – such as:
  - NetNam (Vietnamese) <http://home.netnam.vn/>
  - Nerim (French) <http://www.nerim.net/>
  - Full list available at <http://thelist.internet.com/countrycode.html>
- Gamers (Games ISP <http://www.gamesisp.com/faq.html>)
- Telecommuters – such as:
  - Vista <http://www.vbbn.com/> -- “Vista is mainly targeting telecommuters, home offices and technically advanced families.” [http://www.isp-planet.com/fixed\\_wireless/business/2002/vista.html](http://www.isp-planet.com/fixed_wireless/business/2002/vista.html)
- Advanced Security
- Surfers (<http://www.asurfer.com/news.html>)

## **7. CONSUMER CHOICE: SOME KEY DIFFERENTIATORS**

Viewed through the eyes of the typical consumer, a rich array of choices exist the narrowband ISP space. Consumers now are free to ask a series of questions that enable them to differentiate one ISP from another. Some of those questions include:

**a. Rates**

- Is there a setup fee for the account?
- Does the ISP provide flat-rate accounts? How many hours per week or month are included?
- Does the ISP offer metered accounts?
- Does the ISP charge extra for usage during peak times?

**b. Phone Lines**

- Does the ISP provide dial-up numbers in the local area?
- Do the dial-up numbers in the local area support the modem speed?
- What is the ratio of subscribers to modems? How long does it take to connect during peak times of the day? If the lines become busy too often, will the ISP stop signing up new accounts until new modems are added to the lines?
- Does the ISP regularly update its equipment?
- Are all modems in the ISP's pool 56K, or are some older modems still in service? Is the ISP V.90 standard? (an ITU modem standard for 56K modems).
- Does the ISP provide an alternate line in the local area to use if there is a problem? Are there local dial-up numbers for other area codes? Does the ISP provide an 800 number to connect?

**c. Types of Services**

- Dynamic v. Static IP Addresses – How much more does a static IP address cost? Dynamic IP addresses are typically harder to use with a computer's Internet software. Static IP addresses are important for remote workers who need access through corporate firewalls and for subscribers registering their own domain names.
- Does the ISP provide domain name service? How much do they charge for this service?
- Does the ISP provide space for a Web page to users? Is there an added cost? How much storage space is provided? Does the ISP offer FTP services? (FTP allows one to update and maintain a website; can also be useful for uploading and downloading files that are too big for e-mail, such as digital photos.)

**d. Software**

- Does the ISP provide software for connecting? Is the software an additional cost?
- Does the ISP provide software for all types of computers and operating systems? Is the software easy to configure? Does the ISP provide service support for installing the software?
- Can the same software be used to dial into different ISPs? Does the ISP have proprietary software for Internet use? Does the ISP force the use of one browser, such as Internet Explorer?

- How difficult is it to obtain the software from the ISP? Does it mail it to you or do you have to download it?
- Can the software be used to provide or support Application Service Provider (ASP) services?

**e. Service**

- What are the ISP's technical support hours? Do they provide technical support during evenings and weekends? Does the ISP provide a toll-free technical support number? How difficult is it to get through to technical support? What is the average waiting time?
- Will the ISP give technical support via e-mail, or only via phone? How fast is the response time?
- How large is the ISP's technical support staff? Does the ISP provide online help pages? Are they helpful or too technical?

**f. Reliability and Quality**

- Does the ISP go down often? How long does it take to restore service?
- Does the ISP have a backup system that guarantees service? Will the ISP accept large mail messages or are messages truncated at a certain length?
- Does the ISP offer newsgroups?
- What is the ISP's connection to the Internet? Is there a lag when connecting?
- Does the ISP use multiple redundant connections to protect against connection failures? Does it channel all traffic through one pipe?

**g. Special Issues**

- Does the ISP provide filtering (child-proofing for unacceptable sites)?
- Does the ISP offer secure service for online transactions? What other ecommerce options are available?
- Does the ISP offer special services not available from other ISPs? Are these services optional so that they are not needlessly included in the rate agreement?
- Does the ISP provide personal information to mailing lists or commercial agencies?
- Does the provider offer Web e-mail?
- Does the ISP provide Service Level Agreements?
- What type of security does the ISP support for always-on (ISDN or DSL) connections?

The incredible diversity in service providers, and the numerous offerings of tailored content, applications, and services, gives the consumer an ability to create a unique interactive experience based solely on his or her personal choice.



**D. Big Trouble in the Broadband World**

Over the past few years, the BOCs have begun to deploy Digital Subscriber Line (DSL) capabilities in their local loop infrastructure. DSL originally was utilized by the ILECs in the late 1980s to provision copper loop-based “T-1” services to other carriers and large companies. With the emergence of competitive DSL carriers such as Covad, Northpoint, and Rhythms, and the advent of cable modem service provided by cable companies, however, the BOCs eventually realized that DSL could be used as a lower-cost broadband transmission technology for consumer and business use. Today, the BOCs and their fellow ILECs already have deployed ADSL-based Internet access service to over 70 percent of the public.

Broadband technology offers enormous potential to allow ISPs to speed the delivery of enhanced applications, content, and services to tens of millions of residential customers across the country. However, despite some claims to the contrary, the introduction of broadband technology into existing ILEC networks does not in any way entail the build-out of an entirely new network, or somehow alter the fundamental nature of the underlying telecommunications transport platform. In fact, dial-up (narrowband) Internet access and DSL-based (broadband) Internet access utilize the same local telephone facilities and infrastructure, and allow consumers to reach the same types of content and services from the Internet. The fact that affiliated and unaffiliated ISPs provide high-speed Internet access, utilizing underlying telecommunications services provided by the BOC, should not be surprising. This is precisely the case on the narrowband side, where BOCs provide the dial-up connections that ISPs combine with

information services and offer to consumers as Internet access. The very same analysis applies to Internet access provided over DSL transport lines. In both cases, the ILEC controls the “last mile” facilities needed to reach the end user.

Despite the pro-competitive provisions of the Telecommunications Act of 1996, the vast majority of DSL lines in this country are now provided by the Bell Operating Companies and other incumbent LECs. According to the FCC’s most recent Section 706 report, as of June 30, 2001, the ILECs controlled 93 percent of all ADSL lines, compared to only 7 percent for competitive LECs.<sup>19</sup> Moreover, CLECs actually lost DSL customers in the first half of 2001, while the ILECs’ DSL customer base continued to grow rapidly.<sup>20</sup> These figures are hardly surprising, given the fact that most of the ILECs’ erstwhile DSL-based CLEC rivals have been forced to leave the business or substantially reduce the scope of their networks.

Even more disturbing than the lack of competition for the wholesale DSL inputs, however, is the growing BOC dominance in the retail market for DSL-based Internet access. For example, SBC recently boasted that 80 percent of its total DSL lines are signed up to its own ISP.<sup>21</sup> Other industry sources put the BOCs’ share of the DSL-based Internet access market even higher.<sup>22</sup> In sharp contrast, the BOCs today have only a

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<sup>19</sup> In re Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, 17 F.C.C.R. 2844 (2002), at Table 5 (“Third 706 Report”). See also Jim Thompson, “Will ISPs Be Trampled in Dance of DSL Titans?,” ISP-Planet (2000), available at <http://www.clec-planet.com/business/augisp.htm> (last viewed Feb. 28, 2002) (ILECs control 80 percent of the DSL market).

<sup>20</sup> Section 706 Third Report at para. 51 n.110.

<sup>21</sup> Eric Krapf, “The Coming DSL Debacle,” Business Communications Review (June 2001) at 6.

<sup>22</sup> Sue Ashdown, “Can America Compete with Bell Lobbying Armies,” Internet Industry Magazine, Fall 2001, at 74-75 (estimating the BOCs’ share of the DSL-based Internet access market as between 78 and 87 percent).

minimal percentage of narrowband ISP customers,<sup>23</sup> which can be attributable largely to the success of the FCC's Computer Inquiry policies in the dial-up access world. This striking disparity between the BOCs' small share of the dial-up ISP market, and their overwhelming share of the DSL-based broadband ISP market, clearly demonstrates that the BOCs retain monopoly control over bottleneck broadband transmission facilities, and have begun to leverage their control over those DSL-based inputs as a means of dominating the high-speed Internet access market.

This troubling situation has only been exacerbated by the fact that the FCC has failed to back up its own existing nondiscrimination policies with strong and effective enforcement. As a result, the BOCs have been free to commit numerous anticompetitive acts against independent ISPs, primarily by denying ISPs equal access to DSL networks.<sup>24</sup> Despite complaints filed by ISPs in various regulatory fora – including the FCC – it appears that very little has been done to date to enforce the Computer Inquiry rules in the DSL realm.<sup>25</sup>

Under these circumstances, it is not surprising that the BOCs have used their monopoly positions to quickly seize a disproportionate share of the retail ISP business

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<sup>23</sup> Patricia Fusco, "Top U.S. ISPs by Subscriber: Analysis of 2001 Year End Reports," ISP Planet, February 11, 2002; Patricia Fusco, "Top U.S. ISPs by Subscriber," ISP Planet, February 11, 2002.

<sup>24</sup> See, e.g., <http://www.cybertelecom.org/ci/enforcem.htm> (Site includes links to articles and filings related to the issue of ISP discrimination).

<sup>25</sup> See, e.g., Verified Complaint of the California ISP Association, Inc. Against Pacific Bell Telephone Co. (U-1001-C) and SBC Advanced Solutions, Inc. (U-6346-C) ( <http://www.cispa.org/244547.DOC>) (ISPs challenge unlawful DSL contract terms); FCC Complaint of Earthlink against SBC (Nov. 5, 2001), available at <http://www.brandx.net/fcc/earthlink-complaint/Part%201.pdf> (Earthlink challenges unlawful DSL tariff); Hearing before the Florida Public Service Commission at <http://www.floridapsc.com/psc/dockets/index.cfm?event=displayFile&Link=01895%2D01%2Epdf> (Independent ISPs allege ILEC discrimination); In the Matter of SBC Communications, Inc., Notice of Apparent Liability for Forfeiture, File No. EB-01-IH-0642, NAL/Acct. No. 200232080001 (Nov. 1, 2001), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-01-2549A1.doc](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-01-2549A1.doc). (Enforcement Bureau investigates SBC discrimination against unaffiliated ISPs in provisioning and maintaining DSL; AISPA Letter to FCC Enforcement Bureau <http://www.aispa.org/1031/wrapper.jsp?PID=1031-10&CID=1031-110601B> (ISP alleges discrimination by Qwest Communications in providing DSL services).

that depends on DSL connections. Coupled with the fact that broadband ISP growth is roughly three times that of narrowband ISP growth,<sup>26</sup> the ILECs' market dominance raise serious concerns about the future of the independent ISP industry, and the Internet generally. It simply cannot be in the public interest for policymakers to stand by and do nothing while the ILECs, via their fully-integrated broadband ISPs, extend their local telephone monopolies to the very heart of the Internet.

At this critical juncture in the evolution of the Internet towards the use of broadband connections, the FCC's refusal to adequately enforce its own rules to protect consumers and ISPs alike from a burgeoning BOC monopoly certainly is deeply troubling. An even greater cause for alarm, however, is the FCC's new proposal to eliminate the very nondiscriminatory access policies that helped pave the way for the Internet in the first place.<sup>27</sup> The BroadNet Alliance believes that the right policy answer in the broadband DSL world is the same right answer that has been demonstrated so convincingly in the narrowband "dial-up" world: the FCC must retain and enforce the existing nondiscrimination requirements contained in its Computer Inquiry rules. Only when ISPs have equal access to DSL-based telecommunications connections will all U.S. consumers have a genuine choice for a diversity of broadband content, services, and applications.

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<sup>26</sup> Patricia Fusco, "Top U.S. ISPs by Subscriber," ISP Planet, November 2, 2001.

<sup>27</sup> In the Matter of Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, CC Docket No. 02-33, Notice of Proposed Rulemaking, FCC 02-442, released February 15, 2002.

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**For Further Reading:****ARTICLES****ISPs Diversify Services to Meet Demand (4/12/02)**

<http://isp-planet.com/research/2002/evolution.html>

Independent ISPs are not going to sit back while larger rivals corner the market on new services, a report by INT Media Research finds. In the wild west of Wi-Fi and satellite services, the humble antenna is the competitive equalizer.

**ISPs Are Nuts (And Bolts) Of Any Broadband Future (3/14/02)**

<http://isp-planet.com/business/2002/bolts.html>

Internet service providers (ISPs) now know that corporate America hopes that broadband Internet services will bring the economy back to boom, but corporate plans ignore small ISP businesses, threatening the whole enterprise.

**VoIP New Briefs**

[http://isp-planet.com/technology/2002/voip\\_briefs\\_020610.html](http://isp-planet.com/technology/2002/voip_briefs_020610.html)

ISP competition is driving these types of advancements.

**SBC Unfair on High-Speed Net, ISPs charge**

By John Borland

Staff Writer, CNET News.com

July 26, 2001, 3:30 PM PT

[HTTP://NEWS.COM.COM/2100-1033-270673.HTML?LEGACY=CNET&TAG=CD\\_MH](http://news.com.com/2100-1033-270673.html?LEGACY=CNET&TAG=CD_MH)

**SBC DELAYS PROMPT DSL SUSPENSION**

By JIM WAGNER

AUGUST 3, 2000

[HTTP://WWW.INTERNETNEWS.COM/ISP-NEWS/ARTICLE.PHP/8\\_429251](http://www.internetnews.com/isp-news/article.php/8_429251)

**Kentucky PSC: BellSouth Provided Discriminatory Access**

By Carol King

December 6, 2000

[http://www.internetnews.com/isp-news/article.php/8\\_527761](http://www.internetnews.com/isp-news/article.php/8_527761)

**BellSouth told to fix DSL fees: State backs IgLou's claim that pricing thwarts competition**

By Richard Des Ruisseaux, The Courier-Journal

Dec. 6, 2000

<http://www.courier-journal.com/business/news/001206bell.html>

**ISPs allege Bell abuse in high-speed services**

By John Borland

Staff Writer, CNET News.com

October 27, 1999

<http://news.com.com/2100-1040-232021.html>

### **Local Baby Bells blamed for broadband blues**

By Mark Leon

December 19, 2001 12:44 pm PT

<http://www.infoworld.com/articles/hn/xml/01/12/19/011219hnbabybells.xml>

### **ISP Competition Fuels Stronger Service Level Agreements (SLAs) (1/17/00)**

<http://www.nwfusion.com/news/2000/0117carrier.html>

Competition provides choices that help ensure reliability.

### **Sources:**

A quick list of some of the thousands of ISPs available to consumers can be found at

<http://thelist.internet.com/index.html>

- <http://www.mbcnet.org/archives/etv/V/htmlV/videotext/videotext.htm>
- <http://www.isoc.org/internet/history/>
- <http://www.pbs.org/internet/timeline/index.html>
- [http://www.pbs.org/opb/nerds2.0.1/networking\\_nerds/atwork.html](http://www.pbs.org/opb/nerds2.0.1/networking_nerds/atwork.html)
- Apple II History – <http://apple2history.org/history/ah22.html>
- <http://www.tidbits.com/iskm/iskw2html/pt3/ch09/ch09a1.html#aa3>
- <http://www.mbcnet.org/archives/etv/T/htmlT/telcos/telcos.htm>
- Jack Egan, Online Goes Big Time: The Commercial Services Are Beating the Web by Joining It, US NEWS & WORLD REP., Nov. 20, 1995, at 104.
- <http://keithlynch.net/timeline.html>